

# Anatomical Information on *Thorunna* (= *Babaina*) (Nudibranchia: Chromodorididae) from Toyama Bay and Vicinity, Japan

by

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*Abstract.* *Glossodoris florens* Baba, 1949, was referred to the new genus *Babaina* by Odhner in Franc, 1968, but it was transferred to *Thorunna* Bergh, 1878, by Rudman, 1984. This species, the type of *Babaina*, was studied again. It agrees with *Thorunna* proper in the anatomy of the genital system, but it differs somewhat from *Thorunna* proper in details of the tooth morphology and shape of the oral tube.

## INTRODUCTION

Collections made from different stations of Japan during recent years provided a number of both recorded and unrecorded species of the Chromodorididae. This paper describes the taxonomy and anatomy of a species that has not been extensively characterized before.

*Thorunna florens* (Baba, 1949); Hanairo-umiushi  
(Figures 1-3)

### Synonymy

*Glossodoris florens* BABA, 1949:53, 143-144, pl. 19, fig. 67, text-fig. 60—Hayama, Sagami Bay; ABE, 1964:49, pl. 22, fig. 79—Tsuruga Bay, etc.

*Babaina florens*: TAKAOKA BIOL. CLUB, 1978:6, photo (color)—Abugashima, Toyama Bay.

*Thorunna florens* (*Babaina florens*): BABA, 1985:225, figs. 2F, 4F, 5F, 10—Echizen-cho, Echizen Coast; Ogi, Toyama Bay; Togi-Kazanashi, Noto Pen.

### See also:

*Thorunna* BERGH, 1878:575 (type: *Thorunna furtiva* Bergh, 1878—Philippines); RUDMAN, 1984:216, 225-226, 264.

*Thorunna furtiva*: RUDMAN, 1984:216-220, figs. 76, 77, 80—Heron Is., etc., Australia.

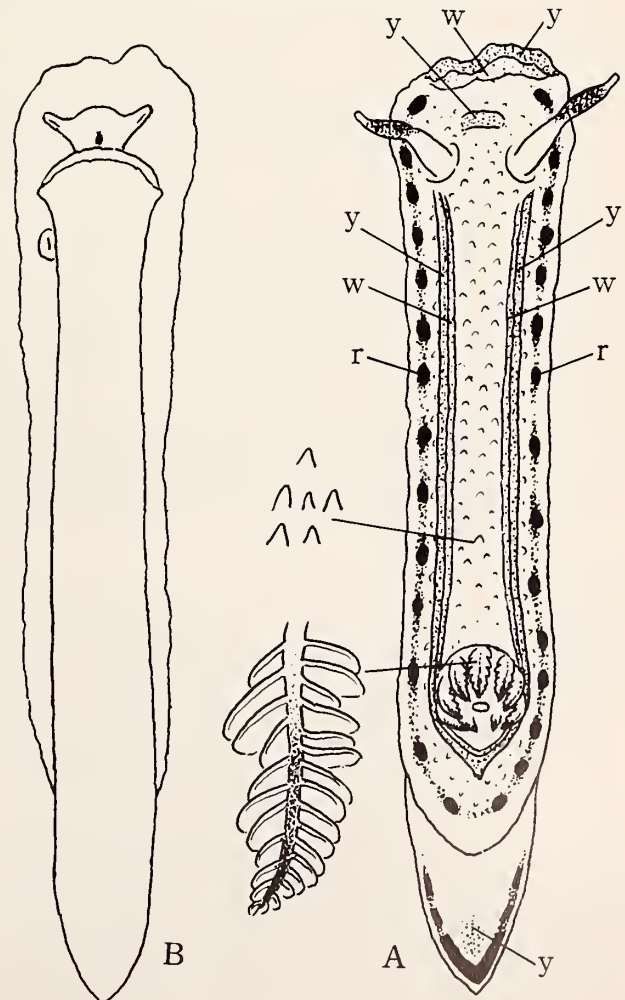


Figure 1

*Thorunna florens*. A and B, from material no. 1. A. Entire animal in actively crawling position, from above, total length 17 mm; part of the dorsal tubercles and a branchial plume are shown enlarged. B. Same animal from below. r, reddish purple; w, opaque white; y, yellow.

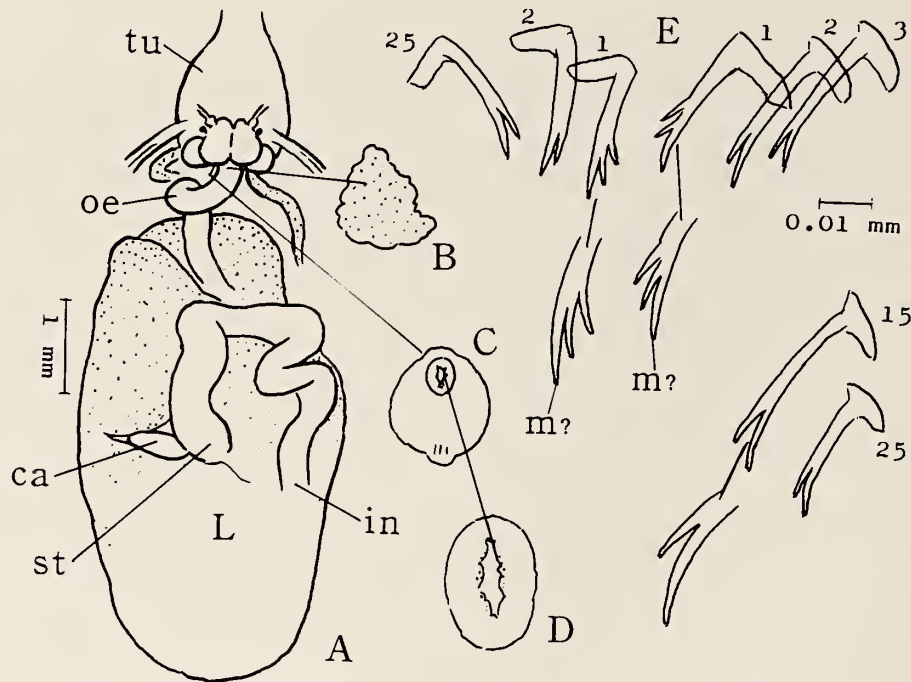


Figure 2

*Thorunna florens*. A-D, from material no. 2; E, from material no. 1. A. Digestive system from above. B. Blood gland (not to scale). C. Pharynx in frontal view (not to scale). D. Labial disc (not to scale). E. A transverse row of radula. ca, caecum; in, intestine; L, liver; m?, main cusp; oe, oesophagus; st, stomach; tu, oral tube.

*Babaina* ODHNER in Franc, 1968:867 (type: *Glossodoris florens* Baba, 1949—Sagami Bay, Japan).

**Main material:** All the specimens were collected by the Takaoka Biological Club. No. 1. Echizen-cho, Echizen Coast, Japan, 11 Aug. 1966, 1 specimen, total length 17 mm (external figures and radula). No. 2. Ogi, Toyama Bay, Japan, 5 Aug. 1962, 11 specimens, length 8–10 mm preserved (digestive system, labial disc, and genital system). Additional specimens were collected from many stations of the central Japan Sea coast between Sado Island and Tsuruga Bay, since the year 1951.

**Description:** A small species. The upper surface of the mantle is covered with minute conical tubercles. No mantle glands are present. The simply pinnate gills, about 9 in number, are set in a circle which is open behind.

An example of the color pattern of the body is shown in Figure 1A. The ground color of the back is slightly yellowish white, but a fleshy tint of the viscera shines through the integument of the mid-dorsum. The chrome-yellow stripe or band running down each side of the back from behind the rhinophore to the rear of the branchial circle is accompanied with an opaque white line on the inside. This chrome-yellow band is usually entire, but is sometimes discontinuous. A short chrome-yellow arc occurs just in front of the rhinophores. The anterior edge of

the mantle is marked with a double band of chrome yellow and opaque white. On the inside of the mantle margin there is a row of reddish purple spots. Each rhinophore is yellow on the club and whitish on the stalk. The gills are whitish. Each plume is tinged with yellow on the rachis. The tail end has a submarginal reddish purple band. The underside of the body (Figure 1B) is colorless.

In *Thorunna* the pharynx is greatly reduced in size in contrast to the large, elongate oral tube. In *T. florens* the oral tube (Figure 2A) is short, swollen, and bulbous. The cuticular labial disc appears to be naked. The radula is extremely small with the formula of  $33 \times 20-25.0.20-25$ . In *Thorunna* proper the first lateral tooth is somewhat stronger than the next lateral teeth. In *T. florens*, however, all the lateral teeth are similarly elongated (Figure 2E), narrow, and spatular in shape. In constitution the first lateral tooth has two denticles on the inside of the main cusp and the next lateral teeth have each a single denticle on the inside of the main cusp. In *T. florens*, both these cusps and denticles tend to become finer and rather unusually tapering to the tips. A stomach caecum is present in *T. florens*. The blood gland lies on the oesophagus just behind the nerve center.

The genital system of *Thorunna florens* is fundamentally as in *Thorunna* proper (Figure 3). That is, the spermatocyst is sausage-shaped, and the spermatheca is larger and

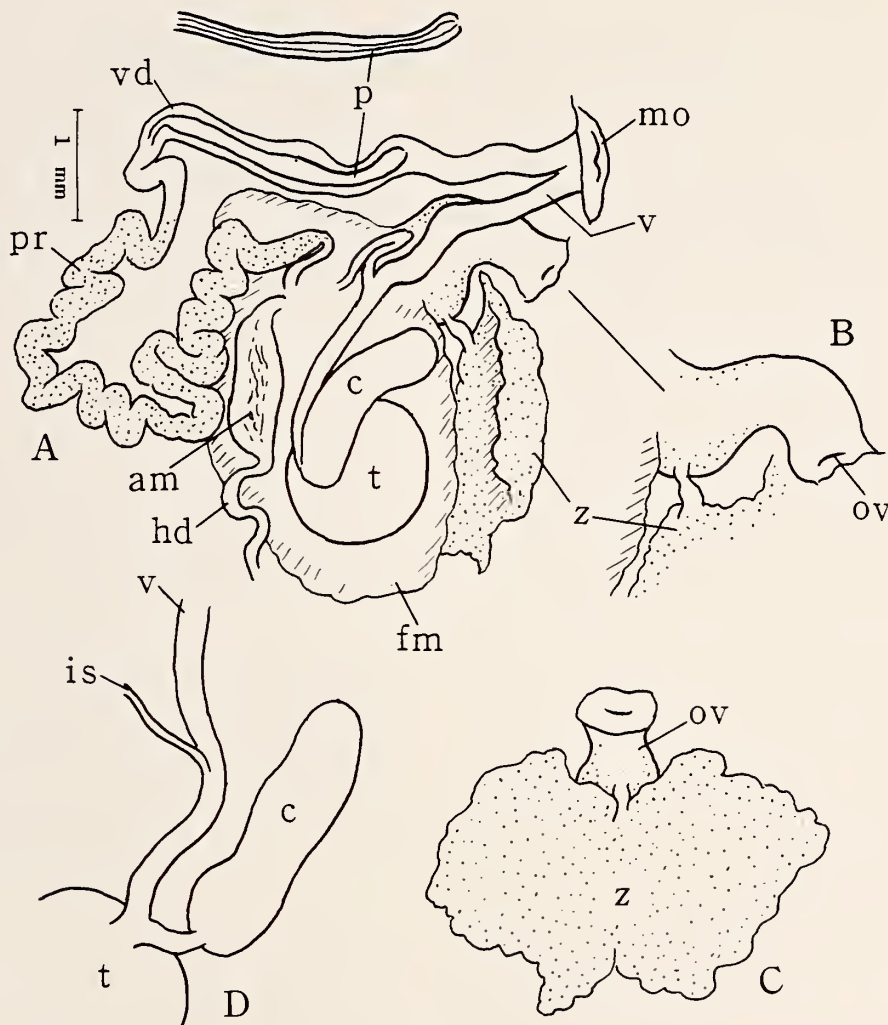


Figure 3

*Thorunna florens*. A-D, from material no. 2. A. Main part of the genital system from above. B. Oviducal part analyzed. C. Vestibular gland in surface view. D. Vaginal part analyzed. am, ampulla; c, spermatocyst; fm, female gland mass; hd, hermaphrodite duct; is, insemination duct; mo, male orifice; ov, oviduct and oviducal orifice; p, penis; pr, prostate; t, spermatheca; v, vagina; vd, vas deferens; z, vestibular gland.

spherical. There is a well-developed vestibular gland leading to the oviducal vestibulum. The vagina is slender, but it is not winding. The penis is unarmed.

**Remarks:** *Babaina* as represented by *Thorunna florens* may be synonymized with *Thorunna* following RUDMAN (1984): *T. florens* agrees with *Thorunna* proper (e.g., *T. furtiva*) in the marked development of a vestibular gland. However, it is noted that *T. florens* differs more or less from *Thorunna* proper in the shape of the first lateral tooth, which is not differentiated in size from the rest of the lateral teeth of the radula. The cusps and denticles on the lateral teeth are apt to be tapering to the tips. The bulbous oral tube

of *T. florens* is also different from the elongate oral tube of *Thorunna* proper. The rodlets of the labial disc in *Thorunna* proper that were mentioned by Rudman (1984) were not seen in my mounted specimen. Thus, *T. florens* is a somewhat rare example of a species that may be included in the genus *Thorunna* in an expanded sense.

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